

AMENDMENTS TO THE SPECIFICATION

- Please amend the title to read:

~~Method and Apparatus~~ Slotted Tubulars for Subsurface Measurements With Directional Sensitivity Particularly Adapted for Reservoir Monitoring in Directed Orientations Applications

- Please add the following to the "Brief Description of the Drawings" section on page 7 after line 13:

Figure 18 is a schematic diagram of a tubular with a tilted antenna and a co-axial antenna configuration in accord with the invention.

Figure 19 is a schematic diagram of a tubular with two tilted antennas disposed in recessed stations with their axes angled toward one another in accord with the invention.

Figure 20 is a schematic diagram of a tubular with an antenna comprising two tilted coils in one recessed station and two parallel antennas in another recessed station in accord with the invention.

Figure 21 is a schematic diagram of a tubular with tilted antennas disposed in parallel tilted recessed stations in accord with the invention.

Figure 22 is a schematic diagram of a tubular with tilted antennas disposed in tilted recessed stations angled toward one another in accord with the invention.

Figure 23 is a schematic diagram of a tubular with a recessed station including curved slots in accord with the invention.

- Please amend the first full paragraph on page 12, beginning on line 5, as follows:

Figure 9 shows another embodiment of the invention. In this particular embodiment, one or more slots 26 are machined into the tubular 10 to fully penetrate the wall at the recessed 12 station. An antenna 106 is disposed on the tubular 10 in alignment with the slot 26. The slot 26 is formed at an angle with respect to the longitudinal axis of the tubular 10 so that the slot 26 is preferably perpendicular to the antenna 106 at the intersection of the slot 26 and antenna 106. However, if the antenna 106 is mounted co-axially with the tubular 10, the slots 26 are preferably formed parallel to the longitudinal axis of the tubular 10 as shown in Figure 10b.

Figure 18 shows such an embodiment with a tilted antenna 100 and a co-axial antenna 108 disposed in alignment with longitudinal slot 26. The slots 26 aid[[s]] in attenuating any current flow around the metallic tubular 10 that may be generated by the current flow in the antennas 106, 108. The length and displacement of the slot(s) 26 may vary. For example, Figure 23 shows a tubular with curved slots 26. A preferable slot 26 length is three times the extent of the wire thickness of the coil forming the antenna 106. Figure 20 shows another embodiment including an antenna formed of two coils 100, 102 having non-parallel axes in one groove and two additional antennas 100, 100 disposed in another groove with their axes parallel to one another.

- Please amend the third full paragraph on page 12, beginning on line 20, as follows:

Turning to Figures 10a and 10b, two other embodiments of the invention are shown. Embodiment 10a includes two tilted antennas 106 disposed on the tubular 10. Each antenna 106 is positioned in alignment with a series of slots 26 formed in the tubular 10. Figure 19 shows a similar embodiment with the tilted antennas 100 each disposed within a groove formed on the tubular 10. Figure 10a also shows the circuitry enclosure 18 and wireline 22 positioned on the tubular 10 as described above.

- Please amend the first full paragraph on page 14, beginning on line 1, as follows:

Figure 12 shows another embodiment of the invention. In this particular embodiment, an antenna 106 is disposed within a narrow tilted recess 12 formed in the tubular 10. Multiple slots 26 are also provided in the tubular 10 of this embodiment. The slots 26 are sealed and the antenna 106 may be potted within the recess 12 as described above. By narrowing the recess 12, greater structural integrity of the tubular 10 is maintained. The recess 12 may be sealed with Randallite, fiberglass-epoxy, rubber, or any suitable compound permitting the passage of EM energy. Figure 21 shows a tubular 10 embodiment with two tilted parallel recesses, each recess having a tilted antenna 100 disposed therein over slots 26. Figure 22 shows another tubular 10 embodiment with the tilted recesses angled toward one another.